

SPEARGUNS
USER'S GUIDES



DEMKA
Spearguns
worldwide provider



USER'S GUIDE FOR DEMKA SPEARGUNS

GENERAL

AMI

AMI II

VELOS

ALS

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Warning For safe and efficient use of any Demka speargun, please read this guide carefully in advance. Consult this guide also when a problem emerges that you cannot yourself resolve.

THE CONTENTS OF THIS GUIDE

The guide consists of three sections. The first section contains: (a) warnings and advice concerning spearfishing in general (b) an outline of the basic operational procedures (c) a description of the function, form and specifications of the various components of every Demka speargun and finally (d) an outline of the necessary regular and periodic maintenance procedures as well as general precautions that ensure the effective and safe use of the spearguns. The second section provides an insight to the various Demka speargun models. The third section describes problems that may emerge, their possible causes, and the procedures that need to be followed to overcome them.

Explanation of symbols



Warning: Following instructions with this sign can prevent body injuries or even death.



Attention: Following instructions with this sign can protect the user from unpleasant situations and the equipment from damages.



Note: Information with this sign provides additional details that are useful for both amateurs and experienced users.

GENERAL WARNINGS AND ADVICE



Spearguns should only be used for spearfishing.



Never point spearguns to people even if the spearguns are not armed.



Under no circumstances should spearguns be armed or used outside water.



Never put an armed speargun on the buoy.



Never use a speargun as support either by holding it with the spear pointing to you or by holding it from the handle.



Never come out of water with an armed speargun.



Never go for spearfishing alone.



Never go for spearfishing without the special buoy that indicates your position and your activity.



Always carry a special knife in spearfishing.



Always protect your hands during spearfishing wearing a pair of gloves suitable for this activity.



Do not take on spearfishing before being informed by the local authorities on the laws related to this activity.

1.1 GENERAL DESCRIPTION OF SPEARGUNS

DEMKA spearguns consist of the barrel with the spear-guide, the muzzle, the handle, the rubber-slings, the wishbone, the spear, the line and the line-tension system.

The handle and the muzzle are fixed on the two ends of the barrel and together they compose the main body of the speargun.

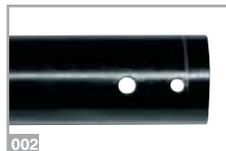
The rubber slings are mounted on the muzzle on the one end and to the wishbone on the other. The spear runs through the muzzle and is guided by it. It is also guided by the spear-guide. It is held by the handle and is connected to the line and the line-tension system on the speargun.

1.2 DESCRIPTION OF COMPONENTS

Barrels

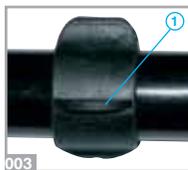


AMI Made of aluminum $\Phi 28 \times 1$ with a $\Phi 26$ internal diameter and the necessary holes to fit the AMI handle (001).



VELOS Same as the AMI barrel except for the different position of the holes necessary to fit the VELOS handle (002).

Spear-guides



AMI spear-guide. Internal diameter $\Phi 28$. It guides the spear during the shot. By rotating it or moving it along the barrel, it is possible to adjust the shot to the personal preference of the user. It has fins on its two sides (003-1), which allow the neat placement of the line away from the spear (004-1).



ALS $\Phi 28$ spear-guide. Internal diameter $\Phi 28$. It guides the spear during the shot. By rotating it or moving it along the barrel, it is possible to adjust the shot to the personal preference of the user. It has fins on its two sides (005-1), which allow the neat placement of



the line away from the spear (006-1).

Muzzles



AMI muzzle. This muzzle takes one pair of screwed rubber slings and has a holder for a single circulated rubber sling. The thread of the sockets is M14x1. The muzzle has an opening to hold and direct the spear. It also has a $\Phi 4$ hole (007-1) to fasten line-tension system.

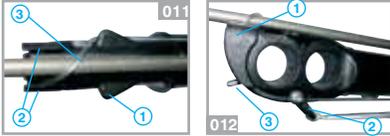
AMI II muzzle. This is an improved version of the AMI muzzle. A "D" shackle (008-1) has replaced the $\Phi 4$ hole, to fasten the line-tension system or to guide line of the reel when one is used.



Articulated VELOS muzzle. This is a two-part muzzle with an articulation. It consists of a base (009-1) and a moving part (009-2). It takes one pair of screwed rubber slings and has a holder for a single circulated rubber sling. The thread of the sockets is M14x1. It features an adjustable opening to hold and guide the spear. It has a fitted metallic guide (010-1) to fasten the line-tension system or to direct line of the reel when one is used.



ALS muzzle. This is an open-type muzzle with fins (011-1) and clips (011-2, 012-1) on both sides, which allow the line to hold the spear in place. (011-3). It has two holders for special circulated rubber slings. It also has a "D" shackle (012-2) to fasten the line-tension system or to direct the line of the reel when one is used. A pin (012-3) serves to hold the line when its length is more than three (3) times the length of the barrel.

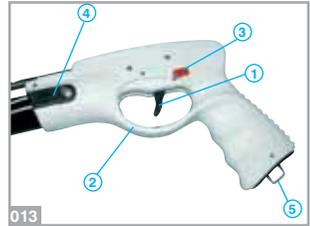


Note All Demka muzzles fit to all types of Demka barrels.

Handles

AMI handle

Plastic handle in one piece. The trigger mechanism is fitted directly to its interior. It has a trigger (013-1), a trigger-cover (013-2), a safety button (013-3), a clip (013-4) to hold the cord in place and a ring to hang the speargun on the buoy (013-5).



VELOS handle.



This handle has cassette-type trigger and trigger-safety mechanisms and an extended covering part of the handle (014-1). It has a trigger-cover (014-2), a safety lever (014-3), a line drop mechanism (014-4) and an extra clip (015-1) to hold the line. It features a soft cover (014-5) on the sheath and a soft heel (014-6) to ease the pressure on the user's body during arming. A hole at the bottom of the sheath serves to hang the speargun from the buoy (014-7).



The trigger (016-1) has a sensitivity regulator (016-2). (In position (016-3) the trigger needs to cover a long distance for the shot while in position (017-1) a small one).



Warning The safety mechanism, in all handles, blocks the trigger mechanism but does not hold the spear directly. Therefore, the safety mechanism reduces the possibility of accidental shots but does not exclude it.



Warning Under no circumstances should one alter the technical specifications of the trigger mechanism, as it is extremely dangerous!

Rubber slings



Standard. Made of amber natural latex tubing with internal diameter of approximately 3 mm. Standard plastic rings with a M14x1 thread (018) are assembled on both ends to fit in the muzzle and the wishbone nut.

Anemos. Made of black natural latex tubing with internal diameter of approximately 3 mm. A standard plastic ring with a M14x1 thread (019-1) is assembled on one end, which is mounted on the muzzle. On the other end it has a special part with an M4x1 thread (019-2) to fit in the nut of the Anemos wishbone. It has a safety mechanism (020-1) to prevent the wishbone nuts from unscrewing.



ALS Anemos. Made of black natural latex tubing with internal diameter of approximately 3 mm. A special part with M4x1 thread is assembled on each end to fit in the socket of the Anemos wishbone. It features a safety mechanism (020-1) to prevent the wishbone nuts from unscrewing and a ring at the center to prevent the sling from moving when mounted on the muzzle (021-1).



Note The performance of a speargun depends a lot on the technical specifications of the rubber-slings that are fitted onto it. The most influential specifications are the diameter, the hardness, the modulus of elasticity and the hysteresis of a rubber-sling at a given elongation.

Wishbones



Articulated standard. With $\Phi 5$ arms and a small V-shaped $\Phi 2$ wire, fitted directly onto the arms and M14x1 nuts (022).

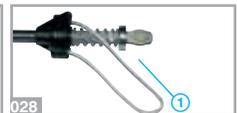
Articulated Anemos. With $\Phi 5$ arms and a small V-shaped $\Phi 2$ wire, fitted directly onto the arms and M14x1 nuts (023). It has a safety mechanism (024-1) to prevent the wishbone



nuts from unscrewing from the rubber-sling's screws.

Spears

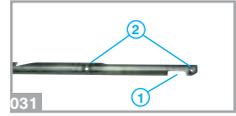
Standard threaded spears.



$\Phi 7$ mm diameter spears with a M7x1 thread (025) for the tip and notches (026) where the wishbone wire is locked. The rear end has a special shape and a notch (027) for secure hold by the trigger-mechanism and is flattened (028-1) to block the ring of spear holder set during the shot.

Standard Tahitian Φ 6.25 single-barb spears.

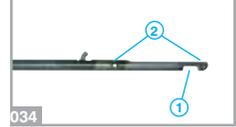
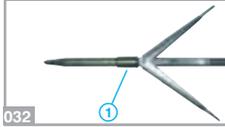
Φ 6.25 mm diameter spears. The front is shaped into a tip and has a fitted barb (029). They have notches (030)



where the wishbone wire locks when the speargun is armed. The rear end has a special shape and a notch (031-1) for secure hold by the trigger mechanism and has two holes (031-2) to fasten the line.

ALS Tahitian Φ 6.50 two-barb spears.

Φ 6.50 mm diameter spears. The front is shaped into a tip and has two fitted barbs (032) and a conical ring (032-1) to improve penetration. Specially shaped welded pins (033)



have replaced the notches where the wishbone wire locks. The rear end has a special shape and a notch (034-1) for secure hold by the trigger mechanism and two holes (034-2) to fasten the line.



Attention The ALS spears can only be used on spearguns with open-type muzzles.

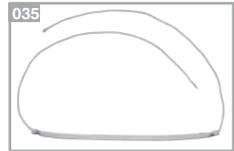


Note The shooting range of a speargun depends, among other factors, on the type, diameter and length of the spear.

Line

The cord or fishing-line, which connects the spear to the speargun.

Line-tension system A thin cord with both ends free. About 50% of its length is sprung and fit inside an elastic tube that is about 15 cm long (035).



Note The line-tension system is tied to the line that connects the spear to the speargun. Its purpose is to keep the line taut and neatly placed while and after the speargun is armed.

SIZE SPECIFICATIONS

The length of their barrel determines the size of the spearguns. The length is measured in centimeters and is noted in the name of the model. For example, the speargun AMI 45 belongs to the AMI series and has a 45 cm long barrel.

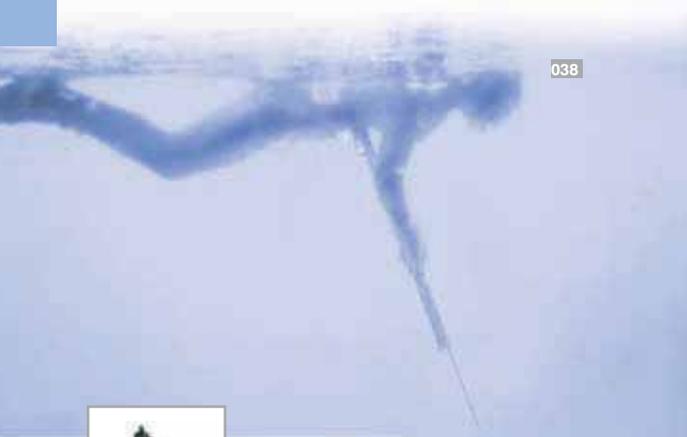


The size of the rubber-slings is determined by their external diameter, measured in millimeters (mm) and the length between the rings, measured in centimeters (cm). For example the rubber-sling described as Φ 16x20 has an external diameter of 16mm and a length $L=20$ cm between the rings (036, 037).



The size of the spears is determined by their diameter, measured in millimeters (mm) and their total length, measured in centimeters (cm). For example, a spear described as 6.5x130 has a 6.5 mm diameter and is 130 cm long.

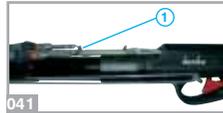
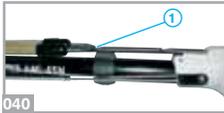
1.3 ARMING THE SPEARGUN



To arm the speargun in the water, take the position shown in the drawing (038).

Keep the abdominal tight; making sure that the speargun is approximately perpendicular to your body. Grasp the rubber-slings near the wishbone and stretch them towards the handle until the wishbone wire is locked in a notch (or a pin) of the spear.

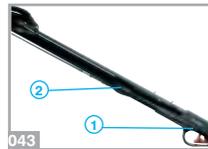
The speargun is armed when the rubber-slings have been stretched (039) and the wishbone wire has been locked in a notch or a pin of the spear (040, 041).



Warning. Do not reduce the grip or release the rubber-slings and do not relax the abdominal, unless you are certain that the wishbone wire is securely locked in a notch or a pin of the spear. Only then should you release the rubber-slings and hold the speargun by the handle. If you are not certain, then, without reducing the grip, return the slings to their original position. You should relax the abdominal only when the speargun is removed and you hold it by the handle.



Attention. Before arming the speargun, make sure that the spear is securely held by the trigger-mechanism and that the line is held on the clip of the handle (042-1, 043-1), taut and neatly placed with the help of the fins of the spear-guide (042-2, 043-2, 044-1). The line must be away from the notches or the pins of the spear where the wishbone wire is locked.



1.4 SHOT / FISHING

To execute a shot, the speargun must be armed. Hold the speargun by the handle and pull the trigger. If the trigger-mechanism is not blocked by the safety-mechanism, the speargun will launch the spear forward.

BUOYANCY

All Demka spearguns float without the spear.

1.5 REGULAR MAINTENANCE

- Wash the speargun with fresh water after use in the sea. Do not use lubricants for its maintenance.
- Remove the tip from the spear after fishing.
- Do not expose the speargun to the sun or to places with high ultraviolet radiation (from fluorescent lamps) because it affects the physical properties of the rubber-slings.
- Avoid the contact of the rubber-slings with any kind of chemicals, mineral oils and petrol. In the case of such contact, wash the slings with water and common washing powder or liquid.
- Do not leave the line-tension system taut, when you do not use the speargun. It will become slack and therefore less effective.
- Do not leave the speargun in places with sand or fine gravel as those can enter the handle and damage the trigger-mechanism.

1.6 PERIODIC MAINTENANCE

- Authorized Demka representatives should service the trigger mechanism every three years.
- Replace the rubber-slings approximately every year or if they show cracks when stretched deriving from improper use or poor maintenance.
- Replace the spear when it is bent by excessive or improper use and you cannot re-straighten it.
- Replace the wishbone when it appears to be bent or it shows signs of wear.



Warning. Always use genuine DEMKA spare-parts.

2. AMI SPEARGUNS

The AMI series includes spearguns in four sizes containing the following main components:

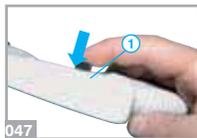
Size	Barrel	Handle	Muzzle	Guide	Rubber-slings	Spear	Wishbone
	Aluminum $\Phi 28 \times 1$				Standard $\Phi 16$	Threaded	
AMI 45	AMI 45 cm				2 x 12 cm	$\Phi 7 \times 65$	
AMI 60	AMI 60 cm	AMI	AMI	AMI	2 x 16 cm	$\Phi 7 \times 80$	Articulated standard
AMI 75	AMI 75 cm				2 x 20 cm	$\Phi 7 \times 95$	
AMI 90	AMI 90 cm				2 x 26 cm	$\Phi 7 \times 110$	

Attention. Before fishing, practice in using the safety, placing and removing the spear and placing the tip. Practice also, outside the water, in taking the position of arming, stretching the rubber-slings without arming the speargun.

2.1 Activating and deactivating the safety



The safety is deactivated in position (045-1). If the speargun is armed and you pull the trigger, the spear will be released and launched. To activate the safety-mechanism, press the red button (045-2) until it comes out from the other side of the handle (046-1). When the safety is in this position (046-1) the trigger is blocked and cannot be pulled to release the spear.



To deactivate the safety-mechanism, press the button (047-1), until the red part reappears from the other side of the handle (045-1).

2.2 Loading and replacing the spear



'click' when the spear is released.

The spear is placed in the speargun by the manufacturer. To remove it, hold the handle and press the trigger (048-1). The spear will be released and will come out of the handle on its own (48-2). If the spear happens to be held more tightly by the trigger mechanism and does not come out of the handle on its own, hold the trigger and at the same time pull the spear outwards with your other hand. In both cases you will hear a characteristic



handle until you hear a characteristic 'click'. The spear should be now held by the trigger mechanism. Pull the spear outwards to make sure that it is held in place.

To load the spear on the speargun, the rear end must go through the muzzle and under the rubber-slings (049). The notch at its very end, which is where the trigger-mechanism holds the spear from, should be facing the barrel (050-1). Push the spear in the



Note. It is not necessary to keep the trigger pressed in order to place the spear in the handle.



Warning. You should not remove the spear when the speargun is armed.



Warning. Before arming the speargun, make sure that the spear is securely held by the trigger-mechanism and that the line is held on the clip of the handle, taut and neatly placed with the help of the fins of the spear-guide. The line must be away from the notches or the pins of the spear where the wishbone wire is locked.

2.3 Fastening the line

In AMI spearguns, the line-tension system and the line are fastened and put in place by the manufacturer.

To place the line neatly, stretch it and lock in the clip of the handle (051). Then, place the taut line under the fin of the spear-guide (052-1).



When you need to replace the line, follow these steps:



Make a loop at each end of the line-tension system (053).



Cut the excess line, at a distance of 5-10 mm from the knot, using a pair of scissors (054) and burn the cut ends with a lighter to prevent them from fraying (055).



Tie one end of the line-tension system to the muzzle of the speargun (056) and connect the other to the line (057-1).



Pass the line through the handle-clip (058) and, after stretching it slightly, put the loose end through the loop at the spear holder set (059).



Pull slightly the loose end until the entire line is straightened but the line-tension system is not stretched.

Mark the line with a marker at about 3 cm from the point where it touches the loop towards the handle (059-1).

Release the line from the handle-clip and tie it on the loop at the point marked (060).



Attention. To maintain the elasticity of the line-tension system do not leave the line taut and locked in the handle-clip after fishing.

2.4 Fitting and replacing the tip

Select a tip or harpoon, which you believe, can cover your requirements. Remove the cover from the thread of the spear.



Screw the one you have selected tightly on the spear by hand (061).



Attention. The tip or harpoon should be easily unscrewed by hand. If, either due to poor maintenance or the poor state of the threads, it becomes difficult to unscrew them, remove the spear from the speargun and try to unscrew them by hand (062) or using a pair of pliers (063), holding the spear on a vice. The use of anticorrosive agents or salt solvents may be helpful in this procedure.



2.5 Replacing the rubber-slings



Remove the wishbone and then unscrew the rubber-slings from the muzzle. The plastic rings of the wishbone should be easily unscrewed by hand. However, the slings are tightly screwed on the muzzle for safety reasons so, if you cannot screw and unscrew them by hand, use a pair of pliers placing them on the plastic ring (064).



Warning. When screwing the rubber-slings make sure that the threads are properly aligned. Improper screwing can damage the threads, reduce the grip and make unscrewing difficult.



Warning. When you replace rubber-slings, keep in mind that the trigger-mechanism of the AMI handle can hold the spear safely when it is loaded with up to 800 Newton strong rubber-slings.



Warning. When you replace rubber-slings, keep in mind that the threads of each socket on the muzzle and each nut of the wishbone can safely hold, at maximum, a 300 Newton strong rubber-sling.



Warning. Always use genuine Demka rubber-slings that carry an indication of the force necessary to elongate them by 200%.

3. AMI II SPEARGUNS

The AMI II series includes spearguns in five sizes containing the following main components:

Size	Barrel	Handle	Muzzle	Guide	Rubber-slings	Spear	Wishbone
	Aluminum $\Phi 28 \times 1$				Anemos $\Phi 17.5$	Tahitian	
AMI II 45	VELOS 45 cm				2 x 12 cm	$\Phi 6.25 \times 70$	
AMI II 60	VELOS 60 cm				2 x 16 cm	$\Phi 6.25 \times 90$	Articulated
AMI II 75	VELOS 75 cm	VELOS	AMI II	ALS $\Phi 28$	2 x 20 cm	$\Phi 6.25 \times 115$	Anemos
AMI II 90	VELOS 90 cm				2 x 26 cm	$\Phi 6.25 \times 130$	
AMI II 100	VELOS 100 cm				2 x 28 cm	$\Phi 6.25 \times 140$	



Attention. Before fishing, practice in using the safety, placing and removing the spear, the wishbone and the rubber-slings. Practice also, outside the water, in taking the position of arming, stretching the rubber-slings without arming the speargun.

3.1 Activating and deactivating the safety

The safety is deactivated when the lever is in position **(065-1)**.

If the speargun is armed and you pull the trigger, the spear will be released and launched.

To activate the safety-mechanism, push the lever downwards **(065-2)** until you hear a characteristic 'click' and the lever goes to position **(066-1)**.

When the safety lever is in this position, the trigger is blocked and cannot be pulled to release the spear.

To deactivate the safety-mechanism, push the lever back upwards **(066-2)**, until you hear again the characteristic 'click' and the lever goes to the previous position **(065-1)**.



3.2 Loading and replacing the spear

The spear is placed in the speargun by the manufacturer.

To remove it, hold the handle and press the trigger pulling at the same time the spear outwards with your other hand **(067)**. You will hear a characteristic 'click' when the spear is released by the trigger-mechanism.

To load the spear on the speargun, the rear end must go through the muzzle and under the rubber-slings.

The notch at its very end, which is where the trigger-mechanism holds the spear from, should be facing the barrel **(068-1)**.

Push the spear in the handle until you hear a characteristic 'click'.

The spear should be now held by the trigger mechanism. Pull the spear outwards to make sure that it is held in place.



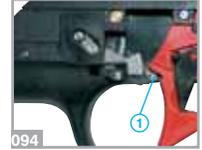
Note. It is not necessary to keep the trigger pressed in order to place the spear in the handle.



Warning. You should not remove the spear when the speargun is armed.



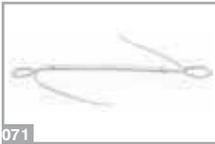
Warning. The trigger-mechanism of the VELOS handle is extremely sensitive. It is therefore possible, if the trigger is released very quickly either during tests to replace the spear or after a shot, for the pawl (hook) of the mechanism, which holds the spear, to get blocked by the trigger (069-1) and not be able to return to the correct position (070-1). In this event, if you load the spear in the handle, the trigger-mechanism will not hold it. To solve the problem, remove the spear and pull the trigger a couple of times before reinserting the spear. The pawl will return to the correct position.



Warning. Before arming the speargun, make sure that the spear is securely held by the trigger-mechanism and that the line is held on the clip of the handle, taut and neatly placed with the help of the fins of the spear-guide. The line must be away from the notches or the pins of the spear where the wishbone wire is locked.

3.3 Fastening the line

In AMI II spearguns, the line-tension system and the line are not fastened by the manufacturer but are placed in a small plastic bag inside the packing. The set includes the line-tension system, a No 160 fishing-line and two fishing-line clips.



To connect the spear to the speargun follows these steps:

1. Make a loop at each end of the line-tension system (071). Cut the excess line, at a distance of 5-10 mm from the knot, using a pair of scissors (072) and burn the cut ends with a lighter to prevent them from fraying (073).

Remove the spear from the speargun.



Make a loop at each end of the line-tension system (071). Cut the excess line, at a distance of 5-10 mm from the knot, using a pair of scissors (072) and burn the cut ends with a lighter to prevent them from fraying (073).

Tie one end of the line-tension system to the "D"

shackle of the muzzle (074).

Tie, using a fishing-line clip and a pair of pliers, the line to the rear hole of the spear. The loop should be approximately 60mm long (075).



Cut the excess fishing-line, at a distance of about 4-5mm from the fishing-line clip, with a pair of scissors (076). Burn carefully the cut end with a lighter (077) and, while it is still soft shape it into a small head (078-1) using wet fingers.

For having a line length three times the barrel length

do the following.

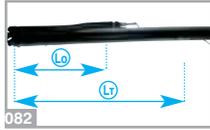
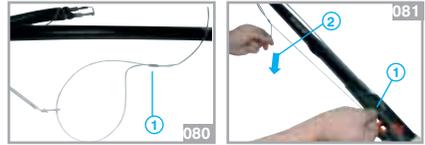
Put the spear with the fishing-line through the muzzle and into the handle. Make sure that the part of the line from the handle to the muzzle is not entangled with the spear.

The line extending from the muzzle, should be passed through the line drop mechanism. Bring the loose end to the muzzle and cut the line at that point (079-1).



Put the loose end of the fishing-line in the loop of the line-tension system and make a loop, using the second fishing-line clip (080-1).

Place the fishing-line in the line drop mechanism (081-1) and pull its loose end (081-2) until the length of the line-tension system (L_T) becomes 1.5 to 2 times greater than its original length (L_0) (082).



You can then bring the fishing-line clip to the desired position to fix the size of the loop (083).

Hold together in one hand the line and fishing-line clip so that they do not move and, using the other hand, release the line from the line drop mechanism on the handle.

Using a pair of pliers, clamp slightly the clip, just enough to prevent the line from moving by the taut line-tension system.

Put the line back on the line drop mechanism on the handle and place it below the fins of the spear-guide (084-1). Check whether the line-tension system is indeed 1.5 to 2 times longer than its original size. If not, change the position of the fishing-line clip.

When the length is right, clamp firmly the fishing-line clip and follow the step (076, 077, 078-1) for the excess line.



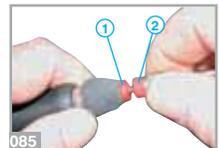
Warning. The line drop mechanism on the VELOS handle retreats inside the handle to release the line only during the shot and only if the line is stretched enough by the line-tension system to pull it. For this, the line-tension system should be stretched to 1.5 - 2 times its original length. If the line is not well taut, the line drop mechanism will not release it. In such an event, the line may snap or, if it is strong enough, it may hold the launched spear and, acting as a spring, pull it backwards with unpredictable consequences



Warning. If you pull the trigger while the line is neatly placed on the speargun then, even if the speargun is not armed, the taut line may move slightly the spear and release it from the trigger-mechanism without you noticing it. Do not arm the speargun after such an event. Proceed to the spear loading procedure before arming.

3.4 Placing and replacing the Anemos wishbone

The rubber-slings and wishbones of the Anemos series have specially shaped parts (085-1, 085-2), which allow a tight and secure hold after screwing. Screwing should be done by hand.



In the package, the nuts are not tightly screwed on the rubber-slings by the manufacturer, to ensure that the part of the rubber that contributes to the firm grip of the screwing does not lose its elasticity. Before arming the spearguns, screw the nuts tightly enough to make unscrewing fairly difficult.

When screwing the nuts of the Anemos wishbone you will hear a characteristic 'click' whose intensity will gradually increase as the force necessary for screwing the nuts increases. The opposite happens while unscrewing the nuts.



Warning. Both before arming the speargun and after the first couple of shots, check how tight the grip of the nuts is. Repeat this check each time you go for fishing.



Note. To maintain the elasticity of the part of the rubber that contributes to the firm grip of the screwing, loosen the nuts of the screws after fishing.

3.5 Replacing the rubber-slings



Remove the wishbone and unscrew the rubber-slings from the muzzle. The slings are tightly screwed on the muzzle for safety reasons. If you cannot screw and unscrew them by hand, use a pair of pliers placing them on the plastic ring **(086)**.



Warning. When screwing the rubber-slings make sure that the threads are properly aligned. Improper screwing can damage the threads, reduce the grip and make unscrewing difficult.



Warning. When you replace rubber-slings, keep in mind that the trigger-mechanism of the VELOS handle can hold the spear safely when it is loaded with up to 1100 Newton strong rubber-slings.



Warning. When you replace rubber-slings, keep in mind that the threads of each socket on the muzzle and each nut of the wishbone can safely hold, at maximum, a 300 Newton strong rubber-sling.



Warning. Always use genuine Demka rubber-slings, which carry an indication of the force necessary to elongate them by 200%.

4. VELOS SPEARGUNS

The VELOS series includes spearguns in four sizes containing the following main components:

Size	Barrel	Handle	Muzzle	Guide	Rubber-slings	Spear	Wishbone
	Aluminum $\Phi 28 \times 1$				Anemos $\Phi 17.5$	Tahitian	
VELOS 60	VELOS 60 cm				2 x 16 cm	$\Phi 6.25 \times 90$	
VELOS 75	VELOS 75 cm	VELOS	VELOS	VELOS	2 x 20 cm	$\Phi 6.25 \times 115$	Articulated
VELOS 90	VELOS 90 cm				2 x 26 cm	$\Phi 6.25 \times 130$	Anemos
VELOS 100	VELOS 100 cm				2 x 28 cm	$\Phi 6.25 \times 140$	



Attention. Before fishing, practice in using the safety, placing and removing the spear, the wishbone and the rubber-slings. Practice also, outside the water, in taking the position of arming, stretching the rubber-slings without arming the speargun.

4.1 Activating and deactivating the safety

The safety is deactivated when the lever is in position **(087-1)**. If the speargun is armed and you pull the trigger, the spear will be released and launched.

To activate the safety-mechanism, push the lever downwards **(087-2)** until you hear a characteristic 'click' and the lever goes to position **(088-1)**.

When the safety lever is in this position, the trigger is blocked and cannot be pulled to release the spear.

To deactivate the safety-mechanism, push the lever back upwards **(088-2)**, until you hear again the characteristic 'click' and the lever goes to the previous position **(087-1)**.



4.2 Regulating the position of the spear

The regulator for the position of the spear on the Velos is a ring with two grooves of different sizes at opposite positions, located near to the muzzle. The shallow groove **(089-1)**, which is suitable for $\Phi 6.25$ spears, has been selected by the manufacturer and placed on the side of the spear. If you use a spear of different diameter, rotate the regulator by 180 degrees to bring a suitable groove at the top. The most appropriate groove is the one that minimizes the gap between the spear and the opening of the muzzle (when the rotating part is down on the base).



4.3 Loading and replacing the spear



The spear is placed in the speargun by the manufacturer. To remove it, hold the handle and press the trigger pulling at the same time the spear outwards with your other hand **(090)**. You will hear a characteristic 'click' when the spear is released by the trigger-mechanism.

Loading procedure is easier, if the speargun is rotated upside down, with the rubber-slings facing downwards.

In this position the rotating part of the muzzle is retracted facilitating the spear to pass through the increased opening between the rotating part and the body of the muzzle **(091-1)**.





Once the spear goes through the muzzle rotate the speargun to its regular position.

Move the spear towards the handle. The notch, where the trigger-mechanism holds the spear from, should face the barrel (092-1). Push the spear in the handle until you hear a characteristic 'click'.

The spear should be now held by the trigger mechanism. Pull the spear outwards to make sure that it is held in place.



Note. It is not necessary to keep the trigger pressed in order to place the spear in the handle.



Warning. You should not remove the spear when the speargun is armed.



Warning. The trigger-mechanism of the VELOS handle is extremely sensitive. It is therefore possible, if the trigger is released very quickly either during tests to replace the spear or after a shot, for the pawl (hook) of the mechanism, which holds the spear, to get blocked by the trigger (093-1) and not be able to return to the correct position (094-1). In this event, if you load the spear in the handle, the trigger-mechanism will not hold it. To solve the problem, remove the spear and pull the trigger a couple of times before reinserting the spear. The pawl will return to the correct position.



Warning. Before arming the speargun, make sure that the spear is securely held by the trigger-mechanism and that the line is held on the clip of the handle, taut and neatly placed, with the help of the fins of the spear-guide. The line must be away from the notches or the pins of the spear where the wishbone wire is locked.



placed in a small plastic bag inside the packing. The set includes the line-tension system, a No 160 fishing-line and two fishing-line clips.

To connect the spear to the speargun follow these steps:

Remove the spear from the speargun.

Make a loop at each end of the line-tension system (095). Cut the excess line, at a distance of 5-10 mm from the knot, using a pair of scissors (096) and burn the cut end with a lighter to prevent them from fraying (097).



Tie one end of the line-tension system to the bronze cylindrical guide on the muzzle (098).

Tie, using a fishing-line clip and a pair of pliers, the line to the rear hole of the spear making a loop about 60mm long (099).

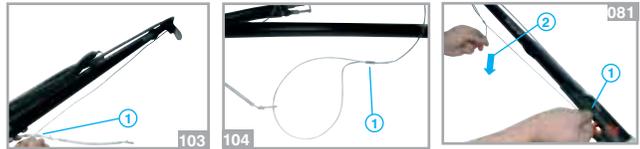
4.4 Fastening the line

In VELOS spearguns, the line-tension system and the line are not fastened by the manufacturer but are

Cut the excess fishing-line, at a distance of about 4-5mm from the fishing-line clip, with a pair of scissors (100). Burn carefully the cut end with a lighter (101) and, while it is still soft shape it into a small head (102-1) using wet fingers. Put the spear with the fishing-line through the muzzle and into the handle. Make sure that the part of the line from the handle to the muzzle is not entangled with the spear.

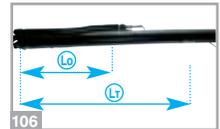


For having a line length three times the barrel length do the following. Put the spear with the fishing-line through the muzzle and into the handle. Make sure that the part of the line from the handle to the muzzle is not entangled with the spear.



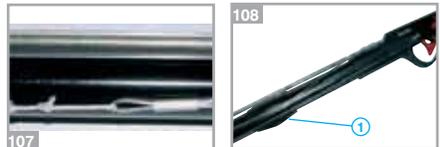
The line extending from the muzzle, should be passed through the line drop mechanism. Bring the loose end to the muzzle and cut the line at that point (103-1). Put the loose end of the fishing-line in the loop of the line-tension system and make a loop, using the second fishing-line clip (104).

Place the fishing-line in the line drop mechanism (105-1) and pull its loose end (105-2) until the length of the line-tension system (L_T) becomes 1.5 to 2 times greater than its original length (L_0) (106).



You can then bring the fishing-line clip to the desired position to fix the size of the loop (107). Hold together in one hand the line and the fishing-line clip so that they do not move and, using the other hand, release the line from the line drop mechanism on the handle. Using a pair of pliers, clamp the clip just enough to prevent the line from moving by the taut line-tension system. Put the line back on the line drop mechanism on the handle and place it below the fins of the spear-guide (108-1). Check whether the line-tension system is indeed 1.5 to 2 times longer than its original size. If not, change the position of the fishing-line clip.

When the length is right, clamp the fishing-line clip and follow the step (100, 101, 102-1) for the excess line.

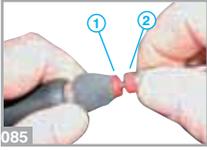


Warning. The line drop mechanism on the VELOS handle retreats inside the handle to release the line only during the shot and only if the line is stretched enough by the line-tension system to pull it. For this, the line-tension system should be stretched to 1.5 - 2 times its original length. If the line is not well taut, the line drop mechanism will not release it. In such an event, the line may snap or, if it is strong enough, it may hold the launched spear and, acting as a spring, pull it backwards with unpredictable consequences.



Warning. If you pull the trigger while the line is neatly placed on the speargun then, even if the speargun is not armed, the taut line may move slightly the spear and release it from the trigger-mechanism without you noticing it. Do not arm the speargun after such an event. Proceed to the spear loading procedure before arming.

4.5 Placing and replacing the Anemos wishbone



The rubber-slings and wishbones of the Anemos series have specially shaped parts (**109-1**, **102-2**), which allow a tight and secure hold after screwing. Screwing should be done by hand.

In the package, the nuts are not tightly screwed on the rubber-slings by the manufacturer, to ensure that the part of the rubber that contributes to the firm grip of the screwing does not lose its elasticity. Before arming the spearguns, screw the nuts tightly enough to make unscrewing fairly difficult.

When screwing the nuts of the Anemos wishbone you will hear a characteristic 'click' whose intensity will gradually increase as the force necessary for screwing the nuts increases. The opposite happens while unscrewing the nuts.



Warning. Both before arming the speargun and after the first couple of shots, check how tight the grip of the nuts is. Repeat this check each time you go fishing.



Note. To maintain the elasticity of the part of the sling that contributes to the firm grip of the screwing, loosen the screws of the nuts after fishing.

4.6 Replacing the rubber-slings



Remove the wishbone and unscrew the rubber-slings from the muzzle. The slings are tightly screwed on the muzzle for safety reasons so; if you cannot screw and unscrew them by hand, use a pair of pliers placing it on the plastic ring (**110**).



Warning. When screwing the rubber-slings make sure that the threads are properly aligned. Improper screwing can damage the threads, reduce the grip and make unscrewing difficult.



Warning. When you replace rubber-slings, keep in mind that the trigger-mechanism of the VELOS handle can hold the spear safely when it is loaded with up to 1100 Newton strong rubber-slings.



Warning. When you replace rubber-slings, keep in mind that the threads of each socket on the muzzle and each nut of the wishbone can safely hold, at maximum, a 300 Newton strong rubber-sling.



Warning. Always use genuine Demka rubber-slings, which carry an indication of the force necessary to elongate them by 200%

5. ALS SPEARGUNS

The ALS series includes spearguns in five sizes containing the following main components:

Size	Barrel	Handle	Muzzle	Guide	Rubber-slings	Spear	Wishbone
	Aluminum $\Phi 28 \times 1$					Tahitian two-barb	
ALS 60	VELOS 60 cm	VELOS	ALS	ALS $\Phi 28$	ALS Anemos $\Phi 16$	$\Phi 6.50 \times 90$	Articulated Anemos
ALS 75	VELOS 75 cm				2 x 32 cm	$\Phi 6.50 \times 115$	
ALS 90	VELOS 90 cm				1x38 cm & 1x44 cm	$\Phi 6.50 \times 130$	
ALS 100	VELOS 100 cm				1x48 cm & 1x54 cm	$\Phi 6.50 \times 140$	
ALS 110	VELOS 110 cm				1x54 cm & 1x60 cm	$\Phi 6.50 \times 150$	
					1x60 cm & 1x66 cm		



Attention. Before fishing, practice in using the safety, placing and removing the spear, the wishbone and the rubber-slings. Practice also, outside the water, in taking the position of arming, stretching the rubber-slings without arming the speargun.

5.1 Activating and deactivating the safety

The safety is deactivated when the lever is in position **(111-1)**. If the speargun is armed and you pull the trigger, the spear will be released and launched.

To activate the safety-mechanism, push the lever downwards **(111-2)** until you hear a characteristic 'click' and the lever goes to position **(112-1)**.

When the safety lever is in this position, the trigger is blocked and cannot be pulled to release the spear.

To deactivate the safety-mechanism, push the lever back upwards **(112-2)**, until you hear again the characteristic 'click' and the lever goes to the previous position **(111-1)**.



5.2 Loading, replacing the spear and fastening the line

In the ALS speargun series, the spear is not held by the muzzle but with the aid of the line. To load the spear properly on the speargun, you first need to fasten the line on the spear and the speargun. In ALS spearguns, the line-tension system and the line are not fastened by the manufacturer but are placed in a small plastic bag inside the packing. The set includes the line-tension system, a No 160 fishing-line and two fishing-line clips.

To connect the spear to the speargun follow these steps:

Remove the spear from the speargun. In the package, you will find the spear in place, held by a piece of rubber **(113-1)**. This rubber strip is for packaging purposes only. Cut this piece of rubber.

To release the spear hold the handle with one hand and press the trigger. Pull at the same time the spear outwards with your other hand **(114)**. You will hear a characteristic 'click' when the spear is released by the trigger-mechanism.





Make a loop at each end of the line-tension system (115). Cut the excess line, at a distance of 5-10 mm from the knot, using a pair of scissors (116) and burn the cut end with a lighter to

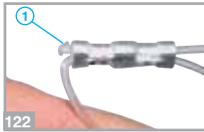
prevent them from fraying (117). Tie one end of the line-tension system to the "D" shackle on the muzzle (118).



Tie, using a fishing-line clip and a pair of pliers, the line to the rear hole of the spear making a loop about 60mm long (119).

Cut the excess fishing-line, at a distance of about 4-5mm from the fishing-line clip, with a pair of scissors (120).

Burn carefully the cut end with a lighter (121) and, while it is still soft shape it into a small head (122-1) using wet fingers.



Once connected to the line, the spear must be loaded to the speargun.

To do this, the spear must go under the rubber-slings towards the handle (123).

The notch at the end of the spear, which is where the trigger-mechanism holds the spear from, should be facing the barrel (124-1).



Push the spear into the handle until you hear a characteristic 'click'. The spear should be now held by the trigger mechanism.

Pull the spear outwards to make sure that it is held in place. Make sure that the part of the line from the handle to the muzzle is not entangled with the spear.

Grasp in one hand the barrel, the spear and the line,

in a location close to the muzzle. At the same time, strain the line, along the barrel's axis, and bring it below the right fin of the muzzle (125-1).

From this position, bring the line (always keeping it taut) above the spear (126-1) and then in the slot between the left clip and the main body of the muzzle (126-2). Pull the line firmly to wedge it in the slot (127).



Note. By adjusting the screw on the clip, you can change the width of the slot and therefore loosen or tighten the grip on the line (125-2).

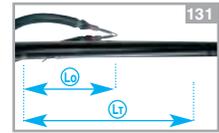
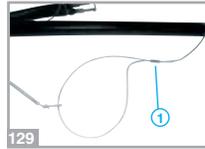


For having a line length three times the barrel length do the following. Put the line through the line drop mechanism, bring the loose end to the muzzle and cut the line at that point (128-1).

Put the loose end of the fishing-line in the loop of the line-tension system and

make a loop, using the second fishing-line clip (129-1).

Place the fishing-line in the line drop mechanism (130-1) and pull its loose end (130-2) until the length of the line-tension system (LT) becomes 1.5 to 2 times greater than its original length (Lo) (131).



You can then bring the fishing-line clip to the desired position to fix the size of the loop (132).

Hold together in one hand the line and fishing-line clip so that they do not move and, using the other hand, release the line from the line drop mechanism on the handle. Using a pair of pliers, clamp the clip just enough to prevent the line from moving by the taut line-tension system.

Put the line back on the line drop mechanism on the handle and place it below the left fin of the spear-guide (133). Place the part of the line, which



is connected on the spear, below the right fin of the spear-guide (134).

Check whether the line-tension system is indeed 1.5 to 2 times longer than its original size. If not, change the position of the fishing-line clip.

When the length is right, clamp the fishing-line clip and follow the step (120, 121, 122-1) for the excess line.



Note. It is not necessary to keep the trigger pressed in order to place the spear in the handle.



Warning. You should not remove the spear when the speargun is armed.



Warning. The trigger-mechanism of the VELOS handle is extremely sensitive. It is therefore possible, if the trigger is released very quickly either during tests to replace the spear or after a shot, for the pawl (hook) of the mechanism, which holds the spear, to get blocked by the trigger (135-1) and not be able to return to the correct position (136-1).



In this event, if you load the spear in the handle, the trigger-mechanism will not hold it. To solve the problem, remove the spear and pull the trigger a couple of times before reinserting the spear. The pawl will return to the correct position.

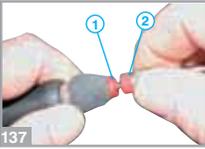


Warning. The line drop mechanism on the VELOS handle retreats inside the handle to release the line only during the shot and only if the line is stretched enough by the line-tension system to pull it. For this, the line-tension system should be stretched to 1.5 - 2 times its original length. If the line is not well taut, the line drop mechanism will not release it. In such an event, the line may snap or, if it is strong enough, it may hold the launched spear and, acting as a spring, pull it backwards with unpredictable consequences.

 **Warning.** If you pull the trigger while the line is neatly placed on the speargun then, even if the speargun is not armed, the taut line may move slightly the spear and release it from the trigger-mechanism without you noticing it. Do not arm the speargun after such an event. Proceed to the spear loading procedure before arming.

 **Warning.** Before arming the speargun, make sure that the spear is securely held by the trigger-mechanism and that the line is held on the clip of the handle, taut and neatly placed, with the help of the fins of the spear-guide. The line must be away from the notches or the pins of the spear where the wishbone wire is locked.

5.3 Placing and replacing the Anemos wishbone



The rubber-slings and wishbones of the Anemos series have specially shaped parts (**137-1**, **137-2**), which allow a tight and secure hold after screwing. Screwing should be done by hand.

In the package, the nuts are not tightly screwed on the rubber-slings by the manufacturer so as to ensure that the part of the sling that contributes to the firm grip of the screwing does not lose its elasticity. Before arming the spearguns, screw the nuts tightly enough to make unscrewing fairly difficult.

When screwing the nuts of the Anemos wishbone you will hear a characteristic ‘click’ whose intensity will gradually increase as the force necessary for screwing the nuts increases. The opposite happens while unscrewing the nuts.

 **Warning.** Both before arming the speargun and after the first couple of shots, check how tight the grip of the nuts is. Repeat this check each time you go fishing.

 **Note.** To maintain the elasticity of the part of the sling that contributes to the firm grip of the screwing, loosen the screws of the nuts after fishing.

5.4 Replacing the rubber slings

The rubber-slings in the ALS speargun series are firmly held on the muzzle by the ring fitted at their center. (**138-1**), which also carries an additional safety ring (**138-2**).

To remove the rubber-slings from the speargun follow these steps:

First remove the two wishbones from the slings. To remove the slings from the muzzle, hold the speargun between your knees (with the handle at the bottom and the muzzle on the top) so that the slings are facing towards you (**139**). Grasp, with the one hand, the barrel near the muzzle and, with the other, the sling that you want to remove (hold it from as close to the muzzle as possible) (**140**). Then gently rotate the sling counter-clockwise until rotation becomes difficult.

From this position, apply additional force to continue the rotation of the sling while, at



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the same time, pulling it out of the muzzle's socket. The ring will unlock and the sling will be removed.

To load the rubber-slings, hold again the speargun between your knees (with the handle at the bottom and the muzzle on the top) so that the slings are facing towards you (**139**). Put the sling that you want to load through the socket on the muzzle ensuring that the groove on its ring (**141-1**) is facing the muzzle.



Guide, then, the ring inside the socket ensuring that the groove meets the protuberance at the socket's interior. From this position, holding the sling from as close to the ring as possible (**142**), push it inside the socket. You will hear a characteristic 'click' indicating that the ring has locked in the muzzle and the rubber-sling is firmly held and cannot move loosely in the muzzle.



Warning. When you replace rubber-slings, keep in mind that the trigger-mechanism of the VELOS handle, which is used in ALS spearguns, can hold the spear safely when it is loaded with up to 1100 Newton strong rubber-slings.



Warning. When you replace rubber-slings, keep in mind that the threads of each nut of the wishbone can safely hold, at maximum, a 300 Newton strong rubber-sling.



Warning. Always use genuine Demka rubber-slings, which carry an indication of the force necessary to elongate them by 200%.

TROUBLESHOOTING

Nr.	Trouble	Possible cause	Actions
01	The barrel has taken water in	Defective sealing o-ring	Replace o-ring
		Poor countersinking of the ends of the barrel	Remove burr from the holes and ends of the barrel and replace o-ring
		Burr is present at the interior of the holes on the barrel	
02	AMI HANDLE: The trigger is loose and the trigger mechanism does not hold the spear.	The spring of the trigger mechanism is broken	Replace spring
03	AMI HANDLE: The safety button is loose and cannot stay in place	Defective safety button	Replace button
04	VELOS HANDLE: The trigger mechanism does not hold the spear.	The trigger mechanism is jammed	Follow instructions and warning under "Loading and replacing the spear" in the user's guide Blow air or send pressurised water inside the handle, while pulling and releasing the trigger.
		Small pebbles or dirt have entered the handle	Then try to load and release the spear without arming the speargun. If the problem persists, contact an authorised Demka dealer
05	The speargun is armed but the trigger cannot be pulled.	The safety is activated	Deactivate safety Disarm the speargun carefully
		Small pebbles or dirt have entered the handle	and remove the spear. Then follow instructions in paragraph (04).
06	During the shot, the spear deviates to the left/right	The spear guide has moved from its correct position	Release the spear from the handle. Let it stand freely on the holder of the muzzle and the spearguide. In this position, push the spear gently towards the handle. It should be at the centre of the opening of the handle. If not, unscrew the spearguide using an Allen key No 2 and rotate it to bring the spear at the centre of the opening of the handle. Then screw carefully the spear guide without moving it from its position
07	During the shot, the spear deviates upwards	The spear guide has moved from its correct position	Move the guide to backwards, following at the same time the instructions in paragraph (6)
		Wrong position of the spear regulator on the VELOS muzzle.	Follow instructions under "Regulating the position of the spear" of Velos speargun

TROUBLESHOOTING

Nr.	Trouble	Possible cause	Actions
08	During the shot, the spear deviates downwards	The spear guide has moved from its correct position	Move the guide to backwards, following at the same time the instructions in paragraph (6)
		Wrong position of the spear regulator on the VELOS muzzle.	Follow instructions under "Regulating the position of the spear" of Velos speargun
09	The wishbone wire does not lock on the notches of a newly purchased spear	Defective spear notches	First check whether the spear is a genuine Demka product. Then ask your dealer to replace it.
10	A newly purchased spear does not fit in the handle	The safety is activated	Deactivate safety
		Defective shape at the back of the spear	First check whether the spear is a genuine Demka product. Then ask your dealer to replace it
11	VELOS HANDLE: The line drop mechanism retreats inside the handle but does not come out again	Defective article of the line drop mechanism or defective pawl (hook) of the trigger mechanism	Contact an authorised Demka dealer

If your speargun is not operating properly and you cannot solve the problem using the above troubleshooting information contact customer support services of Demka for assistance.

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SPEARGUNS

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under-the-surface companion

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